

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{13}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^8R^9, B = NR^{10}, E = O;$

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = CR^{21}R^{22}, E = O;$$

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = S, E = O;$$

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{13}R^{16}, CR^{15}R^{16}CR^{17}R^{12}, CR^{15}=CR^{16}, CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^6R^9, B = O, E = S,$

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = CR<sup>8</sup>R<sup>9</sup>, B = NR<sup>10</sup>, E = S;

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfuryl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = CR<sup>7</sup>R<sup>8</sup>, B = CR<sup>7</sup>R<sup>8</sup>, E = S;

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$15$  In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^6R^7, B = S, E = S;$

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = CR<sup>8</sup>R<sup>9</sup>, B = O, E = CR<sup>21</sup>R<sup>22</sup>;

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>12</sup> (X = O, NR<sup>14</sup> or S);

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = CR<sup>8</sup>R<sup>9</sup>, B = NR<sup>10</sup>, E = CR<sup>21</sup>R<sup>22</sup>;

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

5  $R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$   
 $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

10  $R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

15 In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^6R^9, B = CR^{21}R^{22}, E = CR^{24}R^{25};$

20  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

25  $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21},$   
 $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = CR<sup>8</sup>R<sup>9</sup>, B = S, E = CR<sup>21</sup>R<sup>22</sup>;

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

10

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

15

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

20

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

A = CR<sup>8</sup>R<sup>9</sup>, B = O, E = NR<sup>10</sup>;

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$A = CR^7R^8, B = NR^{10}, E = NR^{23},$

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = CR^{21}R^{22}, E = NR^{10};$$

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>14</sup> or S);

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In another sub-embodiment, a structure of the formula (IV) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$$A = CR^8R^9, B = S, E = NR^{10};$$

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

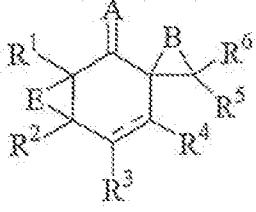
$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

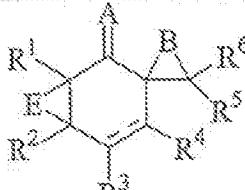
$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

In a particular embodiment of the present invention, the compounds of the formula (IV) are the following species:

(IV)									
A	B	D	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>	
O	O	O	Me	H	H	H	Me	Me	
O	O	O	<i>i</i> -Pr	H	H	H	Me	Me	
O	O	O	Ph	H	H	H	Me	Me	
O	O	O	Me	Me	H	H	Me	Me	
O	O	O	<i>i</i> -Pr	Me	H	H	Me	Me	

 (IV)									
A	B	D	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>	
O	O	O	Ph	Me	H	H	Me	Me	
O	O	O	Me	H	Me	H	Me	Me	
O	O	O	i-Pr	H	Me	H	Me	Me	
O	O	O	Ph	H	Me	H	Me	Me	
O	O	O	Me	H	H	Me	Me	Me	
O	O	O	i-Pr	H	H	Me	Me	Me	
O	O	O	Ph	H	H	Me	Me	Me	
O	O	O	Me	H	CH <sub>2</sub> Ph	H	Me	Me	
O	O	O	i-Pr	H	CH <sub>2</sub> Ph	H	Me	Me	
O	O	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me	
O	CH <sub>2</sub>	O	Me	H	H	H	Me	Me	
O	CH <sub>2</sub>	O	i-Pr	H	H	H	Me	Me	
O	CH <sub>2</sub>	O	Ph	H	H	H	Me	Me	
O	CH <sub>2</sub>	O	Me	Me	H	H	Me	Me	
O	CH <sub>2</sub>	O	i-Pr	Me	H	H	Me	Me	
O	CH <sub>2</sub>	O	Ph	Me	H	H	Me	Me	
O	CH <sub>2</sub>	O	Me	H	Me	H	Me	Me	
O	CH <sub>2</sub>	O	i-Pr	H	Me	H	Me	Me	
O	CH <sub>2</sub>	O	Ph	H	Me	H	Me	Me	



(IV)

A	B	D	R <sup>1</sup>	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>6</sup>
O	CH <sub>2</sub>	O	Me	H	H	Me	Me	Me
O	CH <sub>2</sub>	O	i-Pr	H	H	Me	Me	Me
O	CH <sub>2</sub>	O	Ph	H	H	Me	Me	Me
O	CH <sub>2</sub>	O	Me	H	CH <sub>2</sub> Ph	H	Me	Me
O	CH <sub>2</sub>	O	i-Pr	H	CH <sub>2</sub> Ph	H	Me	Me
O	CH <sub>2</sub>	O	Ph	H	CH <sub>2</sub> Ph	H	Me	Me

In a sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

5 R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

10 R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5

G = OR<sup>26</sup>, B = O, E = O, and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

10 R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfuryl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

15 R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

20

G = OR<sup>26</sup>, B = NR<sup>8</sup>, E = O and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  and  $R^9$  and  $R^{10}$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = CR^2R^9$ ,  $E = O$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5  $G = OR^{26}$ ,  $B = S$ ,  $E = O$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O$ ,  $NR^{14}$  or  $S$ );

10  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$ ,  $R^{21}$ ,  $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O$ ,  $NR^{12}$  or  $S$ );

15  $R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

20  $G = OR^{26}$ ,  $B = O$ ,  $E = S$ ,  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = NR^{10}$ ,  $E = S$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

G = OR<sup>26</sup>, B = CR<sup>27</sup>R<sup>9</sup>, E = S, D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

G = OR<sup>26</sup>, B = S, E = S, D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  and  $R^9$  and  $R^{10}$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = O$ ,  $E = CR^8R^9$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>4</sup> and R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5 G = OR<sup>26</sup>, B = NR<sup>10</sup>, E = CR<sup>8</sup>R<sup>9</sup> and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10 R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

15 R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

20 R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>4</sup> and R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

25 G = OR<sup>26</sup>, B = CR<sup>8</sup>R<sup>9</sup>, E = CR<sup>21</sup>R<sup>22</sup> and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  and  $R^9$  and  $R^{10}$  and  $R^{11}$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{13}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = S$ ,  $E = CR^8R^9$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5 G = OR<sup>26</sup>, B = NR<sup>19</sup>, E = NR<sup>23</sup> and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10 R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>14</sup> or S);

15 R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

20 R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

25 G = OR<sup>26</sup>, B = CR<sup>8</sup>R<sup>9</sup>, E = NR<sup>19</sup> and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = S$ ,  $E = NR^{19}$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5 G = OR<sup>26</sup>; B = O, E = NR<sup>10</sup> and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10 R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

15 R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfamyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

20 R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

25 G = OR<sup>26</sup>, B = CR<sup>8</sup>R<sup>9</sup>, E = NR<sup>10</sup> and D = O..

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, 5 alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

10  $R^1$  and  $R^2, R^3$  and  $R^4, R^5$  and  $R^6$  and  $R^7$  and  $R^8$  and  $R^9$  and  $R^{10}$  and  $R^{11}$  and  $R^{12}$  and  $R^{13}$  and  $R^{14}$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

15  $G = OR^{26}$ ;  $B = O$ ;  $E = O$  and  $D = CR^8R^9$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

20  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

25  $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  and  $R^9$  and  $R^{10}$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = NR^{10}$ ,  $E = O$  and  $D = CR^8R^9$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O$ ,  $NR^{14}$  or  $S$ );

$R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$ ,  $R^{21}$ ,  $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O$ ,  $NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  and  $R^9$  and  $R^{10}$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = CR^8R^9$ ,  $E = O$ ,  $D = CR^{21}R^{22}$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^8$  and  $R^9$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = S$ ,  $E = O$ , and  $D = CR^8R^9$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5  $G = OR^{26}$ ,  $B = O$ ,  $E = S$  and  $D = CR^8R^9$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, 10 cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O$ ,  $NR^{14}$  or  $S$ );

15  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$ ,  $R^{21}$ ,  $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O$ ,  $NR^{12}$  or  $S$ );

20  $R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

25  $G = OR^{26}$ ,  $B = NR^{19}$ ,  $E = S$ ,  $D = CR^8R^9$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

5  $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

10  $R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

15  $Q = OR^{26}$ ,  $B = CR^2R^9$ ,  $E = S$ , and  $D = CR^{21}R^{22}$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

20  $R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

25  $R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

G = OR<sup>26</sup>, B = S, E = S and D = CR<sup>8</sup>R<sup>9</sup>.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfonyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

G = OR<sup>26</sup>, B = O, E = CR<sup>8</sup>R<sup>9</sup> and D = CR<sup>21</sup>R<sup>22</sup>.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  and  $R^9$  and  $R^{10}$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = NR^{10}$ ,  $E = CR^9R^8$  and  $D = CR^{21}R^{22}$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = CR^9R^8$ ,  $E = CR^{21}R^{22}$  and  $D = CR^{23}R^{24}$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, 10 cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O$ ,  $NR^{14}$  or  $S$ );

$R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$ ,  $R^{21}$ , 15  $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphimyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O$ ,  $NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = S$ ,  $E = CR^9R^8$  and  $D = CR^{21}R^{22}$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2, R^3$  and  $R^4, R^5$  and  $R^6$  and  $R^7$  and  $R^8$  and  $R^9$  and  $R^{10}$  and  $R^{11}$  and  $R^{12}$  and  $R^{13}$  and  $R^{14}$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{24}, B = O, E = NR^{19}$  and  $D = CR^9R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

5 the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}$ ,  $B = NR^{10}$ ,  $E = NR^{23}$  and  $D = CR^9R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O$ ,  $NR^{14}$  or  $S$ );

10  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$ ,  $R^{21}$ ,  $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O$ ,  $NR^{12}$  or  $S$ );

15  $R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

20  $G = OR^{26}$ ,  $B = CR^9R^8$ ,  $E = NR^{10}$  and  $D = CR^{21}R^{22}$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2, R^3$  and  $R^4, R^5$  and  $R^6$  and  $R^7$  and  $R^8$  and  $R^9$  and  $R^{10}$  and  $R^{11}$  and  $R^{12}$  and  $R^{13}$  and  $R^{14}$  and  $R^{15}$  and  $R^{16}$  and  $R^{17}$  and  $R^{18}$  and  $R^{19}$  and  $R^{20}$  and  $R^{21}$  and  $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = OR^{26}, B = S, E = NR^{10}$  and  $D = CR^9R^8$ .

In another sub-embodiment, a structure of the formula (V) is given whersin the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5 G = NR<sup>28</sup>R<sup>29</sup>, B = O, E = O, D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10 R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

15 R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

20 R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

25 G = NR<sup>27</sup>R<sup>28</sup>, B = NR<sup>10</sup>, E = O and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2, R^3$  and  $R^4, R^5$  and  $R^6$  and  $R^7$  and  $R^8$  and  $R^9$  and  $R^{10}$  can also each be comprised of one or two  $CR^{12}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}, CR^{16}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^{27}R^{28}, B = CR^9R^8, E = O$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5 G = NR<sup>27</sup>R<sup>28</sup>, B = S, E = O and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10 R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

15 R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

20 R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

25 G = NR<sup>27</sup>R<sup>28</sup>, B = O, E = S, D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2, R^3$  and  $R^4, R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^{27}R^{28}, B = NR^{10}, E = S$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>4</sup> and R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5 G = NR<sup>27</sup>R<sup>28</sup>, B = CR<sup>9</sup>R<sup>8</sup>, E = S and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10 R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>12</sup> (X = O, NR<sup>14</sup> or S);

15 R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alketyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azido, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

20 R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>4</sup> and R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

25 G = NR<sup>27</sup>R<sup>28</sup>, B = S, E = S and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2, R^3$  and  $R^4, R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{13}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^{27}R^{28}, B = O, E = CR^9R^8$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}\sim CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5  $G = NR^{27}R^{28}$ ,  $B = NR^{10}$ ,  $E = CR^9R^8$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O$ ,  $NR^{14}$  or  $S$ );

10  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$ ,  $R^{21}$ ,  $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O$ ,  $NR^{12}$  or  $S$ );

15  $R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}\sim CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

20  $G = NR^{27}R^{28}$ ,  $B = CR^9R^8$ ,  $E = CR^{21}R^{22}$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^{27}R^{28}$ ,  $B = S$ ,  $E = CR^8R^8$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphoryl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>4</sup> and R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>18</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

G = NR<sup>27</sup>R<sup>28</sup>, B = O, E = NR<sup>10</sup> and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>4</sup> and R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>18</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

G = NR<sup>27</sup>R<sup>28</sup>, B = NR<sup>10</sup>, E = NR<sup>23</sup> and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfaryl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^{27}R^{28}, B = CR^9R^8, E = NR^{10}$  and  $D = O$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfaryl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

5 G = NR<sup>7</sup>R<sup>8</sup>, B = S, E = NR<sup>7</sup> and D = O.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

10 R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

15 R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

20 R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

25 G = NR<sup>7</sup>R<sup>8</sup>, B = O, E = O and D = CR<sup>7</sup>R<sup>8</sup>.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{12}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ,

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^7R^8$ ,  $B = NR^8$ ,  $E = O$ , and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

G = NR<sup>7</sup>R<sup>8</sup>, B = CR<sup>7</sup>R<sup>8</sup>, E = O, and D = CR<sup>7</sup>R<sup>8</sup>.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfynyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

R<sup>1</sup> and R<sup>2</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

G = NR<sup>7</sup>R<sup>8</sup>, B = S, E = O and D = CR<sup>7</sup>R<sup>8</sup>.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alketyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^7R^8$ ,  $B = O$ ,  $E = S$  and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alketyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{13}R^{16}$ ,  $CR^{13}R^{16}CR^{17}R^{18}$ ,  $CR^{13}=CR^{16}$ ,  $CR^{13}R^{16}O$  or  $CR^{13}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^7R^8$ ,  $B = NR^8$ ,  $E = S$  and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, 10 cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O$ ,  $NR^{14}$  or  $S$ );

$R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$ ,  $R^{21}$ ,  $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, 15 alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O$ ,  $NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{13}R^{16}$ ,  $CR^{13}R^{16}CR^{17}R^{18}$ ,  $CR^{13}=CR^{16}$ ,  $CR^{13}R^{16}O$  or  $CR^{13}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^7R^8$ ,  $B = CR^7R^8$ ,  $E = S$  and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfuryl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{13}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^7R^8$ ,  $B = S$ ,  $E = S$  and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfuryl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^7R^8$ ,  $B = O$ ,  $E = CR^7R^8$  and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O$ ,  $NR^{14}$  or  $S$ );

$R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$ ,  $R^{21}$ ,  $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O$ ,  $NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^7R^8$ ,  $B = NR^8$ ,  $E = CR^7R^8$  and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2, R^2$  and  $R^3, R^3$  and  $R^4, R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}, CR^{15}R^{16}CR^{17}R^{18}, CR^{15}=CR^{16}, CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^7R^8, B = CR^7R^8, E = CR^7R^8$  and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfanyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^7R^8$ ,  $B = S$ ,  $E = CR^7R^8$  and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O$ ,  $NR^{14}$  or  $S$ );

$R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$ ,  $R^{21}$ ,  $R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfimyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O$ ,  $NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^2$  and  $R^3$ ,  $R^3$  and  $R^4$ ,  $R^4$  and  $R^5$  and  $R^5$  and  $R^6$  can also each be comprised of one or two  $CR^{13}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$G = NR^7R^8$ ,  $B = O$ ,  $E = NR^7$  and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide,

a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^1, R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

$R^1$  and  $R^2$ ,  $R^3$  and  $R^4$ ,  $R^5$  and  $R^6$  and  $R^7$  and  $R^8$  can also each be comprised of one or two  $CR^{15}R^{14}$  groups, connected by a tether, independently selected from  $CR^{15}R^{16}$ ,  $CR^{15}R^{16}CR^{17}R^{18}$ ,  $CR^{15}=CR^{16}$ ,  $CR^{15}R^{16}O$  or  $CR^{15}R^{16}NR^{17}$ ;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

$Q = NR^7R^8$ ,  $B = NR^8$ ,  $E = NR^7$  and  $D = CR^7R^8$ .

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows;

$R^1$  is selected independently from the groups that include hydrogen, alkyl, cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{13}$  ( $X = O, NR^{14}$  or  $S$ );

$R^2, R^3, R^4, R^5, R^6, R^7, R^8, R^9, R^{10}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, R^{16}, R^{17}, R^{18}, R^{19}, R^{20}, R^{21}, R^{22}$  and  $R^{23}$  independently are selected from the groups that include hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or  $XR^{11}$  ( $X = O, NR^{12}$  or  $S$ );

R<sup>1</sup> and R<sup>2</sup>, R<sup>2</sup> and R<sup>3</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>4</sup> and R<sup>5</sup> and R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

§ G = NR<sup>7</sup>R<sup>8</sup>, B = CR<sup>7</sup>R<sup>8</sup>, E = NR<sup>7</sup> and D = CR<sup>7</sup>R<sup>8</sup>.

In another sub-embodiment, a structure of the formula (V) is given wherein the compound or its pharmaceutically acceptable salts or prodrug is defined as follows:

R<sup>1</sup> is selected independently from the groups that include hydrogen, alkyl, 10 cycloalkyl, aryl, alkaryl, arylalkyl, heterocyclic, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>13</sup> (X = O, NR<sup>14</sup> or S);

R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>8</sup>, R<sup>9</sup>, R<sup>10</sup>, R<sup>11</sup>, R<sup>12</sup>, R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>, R<sup>17</sup>, R<sup>18</sup>, R<sup>19</sup>, R<sup>20</sup>, R<sup>21</sup>, R<sup>22</sup> and R<sup>23</sup> independently are selected from the groups that include hydrogen, alkyl, 15 alkenyl, alkynyl, cycloalkyl, cycloalkenyl, aryl, alkaryl, arylalkyl, heterocyclic, sulfonyl, sulfanyl, sulfinyl, sulfamonyl, carboxylic acid, amide, nitro, cyano, azide, phosphonyl, phosphinyl, phosphoryl, phosphine, carbamate, ester, alkcarbonyl, carbonyl, halide, a residue of a natural or synthetic amino acid, or carbohydrate or XR<sup>11</sup> (X = O, NR<sup>12</sup> or S);

R<sup>1</sup> and R<sup>2</sup>, R<sup>2</sup> and R<sup>3</sup>, R<sup>3</sup> and R<sup>4</sup>, R<sup>4</sup> and R<sup>5</sup> and R<sup>5</sup> and R<sup>6</sup> can also each be comprised of one or two CR<sup>13</sup>R<sup>14</sup> groups, connected by a tether, independently selected from CR<sup>15</sup>R<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>CR<sup>17</sup>R<sup>18</sup>, CR<sup>15</sup>=CR<sup>16</sup>, CR<sup>15</sup>R<sup>16</sup>O or CR<sup>15</sup>R<sup>16</sup>NR<sup>17</sup>;

the dotted line indicates the presence of either a single or double bond, wherein in the presence of a single bond, the valences are completed with hydrogens.

25 G = NR<sup>7</sup>R<sup>8</sup>, B = S, E = NR<sup>7</sup> and D = CR<sup>7</sup>R<sup>8</sup>.